

LOSEV, V.V.; GOROVETSKII, V.V. (Moscow)

Effect of the acidity of solution on the electrode processes  
on a bismuth amalgam electrode. Zhur. fiz. khim. 37 no.4:  
847-849 Apr '63. (MIRA 17:7)

1. Fiziko-khimicheskiy institut imeni L.Ya. Karpova.

GORODETSKIY, V.V.; LOSEV, V.V.

Study of electrode processes on bismuth amalgam by a radiochemical method. Dokl. AN SSSR 151 no.2:361-364 J1 '63. (MIRA 16:7)

1. Fiziko-khimicheskiy institut im. L.Ya.Karpova. Predstavleno akademikom A.N.Frumkinym.

(Electrodes) (Radiochemistry)

LOSEV, V. V.; MOLODOV, A. I.; GORODETSKIY, V. V.

"Influence of the following diffusion step on the kinetics of a rapid electrode process."

report presented at 15th Mtg, Intl Comm of Electrochemical Thermodynamics & Kinetics, London & Cambridge, UK, 21-26 Sep 1964.

Karpov Physico-Chemical Inst, Moscow.

CHEMODANOV, A.N.; MOROZOVA, I.K.; GORODETSKIY, V.V.; DEMBROVSKIY, M.A.;  
LOSEV, V.V.; KOLCTYRKIN, Ya.M.

Effect of potential on the rate of platinum dissolution in hydro-  
chloric solutions. Zashch.met. 1 no.4:433-435 J1-Ag '65.

(MIRA 18:8)

1. Nauchno-issledovatel'skiy fiziko-khimicheskiy institut imeni  
L.Ya.Karpova, Moskva.

LOSEV, V.V.; MOLODOV, A.I.; GORODETSKIY, V.V.

Polarization measurements in the presence of concentration polarization. Elektrokhimiia 1 no.5:572-578 My '65.

1. Fiziko-khimicheskiy institut imeni Karpova, Moskva. (MIRA 18:6)

KOSTYAKOV, V.N., kand. tekhn. nauk, YEREMOV, A.Ye., kand. tekhn. nauk;  
LOPODINSKIY, V.V., inzh.

Economic efficiency of the use of flame furnaces with nonoxidizing  
heating. Mashinostroenie no.5:80-82 S-8 '65. (MIRA 16:9)

to the FBI transfer and to the "AND" section.

the terms and transfer and to the "AND" circuit separating the difference of the sum and the numerical base. The latter two circuits are also connected to the output of the chronotron storing the second term. The output of the circuit summing the lengths of the terms and transfer is connected to the input of the "AND" circuit and the recoupling "OR" circuit whose second input is connected to the output of the "AND" circuit separating the difference of the sum and the numerical base.



L 42080-5E

ACCESSION NR: AP5010956

circuit. The output of the "ON" circuit is connected to the input of the "OFF" circuit. The circuit diagram is shown in the attached drawing.

... 1000 none

406

23 1 1

100 100 100

OFFER. 000

Card 2/3

GORODETSKIY, Ya.I.

Drop forging with induction heating of billets. Pribocestro-  
enie no.2:5-6 F '64.  
(MIRA 17:3)

GORODETSKIY, Ya.I., inzhener.

Increasing the precision of the disposition of holes in watch  
parts. Priborostroenie no.7:22-26 J1 '57. (MIRA 10:9)  
(Clockmaking and watchmaking)

AUTHOR: Gorodetskiy, Ya.I.

SCV/119-58-7-9/10

TITLE: The Determination of Forces During the Calibration of Holes by Means of Punches (Opredeleniye usiliya pri kalibrovanií otverstiy shtampami)

PERIODICAL: Priborostroyeniye, 1958, Nr 7, pp. 28-31 (USSR)

ABSTRACT: In the clock and watch industry calibration of holes is often carried out by means of punches. In order to calculate the forces the punches have to absorb, such forces were used by several factories as are necessary for cleaning the exterior of the work pieces. This is shown to be wrong. In a measuring schedule the forces are experimentally measured and tabularized for the punches during the individual phases of calibration. From these values the amounts are determined and given which are necessary in order to be able to calculate the strength of the punch. Special attention must be paid to compressive forces. Transverse bending is not permitted. As a formula for the forces  $P$  during the calibration of holes the experimentally found dependence  $P = \pi d \Delta q$  is given.

Card 1/2

The Determination of Forces During the Calibration  
of Holes by Means of Punches

SCV/ 119-58-7-9/10

There are 6 figures, 3 tables, and 6 Soviet references.

1. Industrial plants--USSR    2. Machine shop practice    3. Tools  
--Applications

Card 2/2

GORODEISKIY, Ya. I., Cand of Tech Sci -- (diss) "Investigation of the Precision of the Tooling of the Openings in the Platina and Bridges of Small Caliber Watch Mechanisms," Moscow, 1959, 11 pp (Moscow Higher Technical School im Bauman) (KL, 2-60, 113)

ANIKEYEV, A.G., inzh.; GORODETSKIY, Ya. I., kand.tekhn.nauk

Stamping platinum blanks for watches without waste.

Priborostroenie no.6:14-15 Je '61. (MIRA 14:6)

(Clockmaking and watchmaking)

ANIKEJEV, A.G. [Anikeyev, A.G.]; GORODECKIJ, J.I. [Gorodetskiy, Ya.I.]

Wasteless stamping of watch bases. Jemma mech opt 7 no.9:287-  
288 S '62.



1. GORODETSKIY, Ye.
2. USSR (600)
4. Mechanical Engineering
7. Consultation. Stan. 1 instr. 23, No. 8, 1952.

9. Monthly List of Russian Accessions, Library of Congress, January 1953. Unclassified.

G(RODETSKIY, Ye., inzh.; SPIRIDENKO, V., inzh.

Let us work without accidents. Bezop. truda v prom. 2 no. 6:24  
Je '58. (MIRA 11:7)  
(Electric power plants--Safety measures)

AR'YEV, T.Ya., prof.(Leningrad); BABCHIN, I.S., prof.(Leningrad);  
 VAYNSHTEYN, V.G., prof. (Leningrad); GORODETSKIY, Ye.M.,  
 kand. med. nauk (Moskva); GRATSIANSKIY, V.P., prof.  
 (Leningrad); KORNEV, P.G., prof.(Leningrad); KAPLAN, A.V., prof.  
 (Moskva); LEVIT, V.S., zasl. deyatel' nauki, prof.[deceased];  
 PSHENICHNIKOV, V.I., prof.(Moskva); RUFANOV, I.G., prof.  
 (Moskva); SITENKO, V.M., prof.(Leningrad); SMIRNOV, Ye.V., prof.  
 (Leningrad); FRIDLAND, M.O., zasl. deyatel' nauki, prof.(Moskva);  
 SHEYNIS, V.N., doktor med. nauk, (Leningrad); SHLAPOBERSKIY,  
 V.Ya., prof.(Moskva); VISHNEVSKIY, A.A., prof., red.; GOL'DGAMMER,  
 K.K., red.; BEL'CHIKOVA, Yu.S., tekhn. red.

[Specialized surgery] Chastnaya khirurgiya; rukovodstvo dlia vra-  
 chei v trekh tomakh. Pod red. A.A. Vishnevskogo i V.S. Levita.  
 Moskva, Medgiz. Vol.3.[The extremities] Konechnosti. 1963. 670 p.  
 (MIRA 16:5)

1. Deystvitel'nyy chlen Akademii meditsinskikh nauk SSSR (for  
 Kornev, Rufanov).

(EXTREMITIES (ANATOMY))--SURGERY)

KALYUZHNYAYA-LUKASHOVA, Galina Mikhaylovna; GORODETSKIY, Ye.P.,  
red.

[Combined use of staphylococcal anatoxin and antibiotics  
in suppurative septic processes] Kombinirovannoe prime-  
nenie stafilokokkovogo anatoksina i antibiotikov pri  
gnoino-septicheskikh protsessakh. Moskva, Medicina,  
1965. 73 p. (MIRA 1266)

GORODETSKOY, YE. N., DL.

527N/5  
831.2  
.06

Iz Istorii Moskovskogo Universiteta 1917-1941. Sbornik Statey (From the History of Moscow University. 1917-1941. Collection of Articles) Pod Red. Ye. N. Gorodetskogo (I Dr) Moskva, Izd-vo Moskovskogo Universiteta, 1955.

285 P.

At Head of Title: Moscow. Universitet.

KOSTENKO, Anastasiya Yakovlevna; GORODETSKIY, Ye.N., red.; VORZHETSOVA, L.N., red.; NOVOSELOVA, V.V., tekhn.red.

[Study topics for the 10th grade: "Reorganization of the national economy" and "Consolidation of the Soviet multinational state"] Izuchenie temy "Vosstanovleniye narodnogo khoziaistva. Ukrepleniye Sovetskogo mnogonatsional'nogo gosudarstva" v X klasse. Moskva, Izd-vo Akad.pedagog.nauk RSFSR, 1959. 81 p. (MIRA 13:2)

(Russia--Economic policy)

(Russia--History)

GORODETSKIY, Yu.B., inzhener.

Directives have little value without a follow-up on their execution.  
Izobr. v SSSR 2 no.4:42-43 Ap '57. (MLRA 10:6)

(Industrial management)

GORODETSKIY, Yu.B., inzhener.

~~SECRET~~

Strict control over the attestations on the utility of inventions  
is necessary. Izobr.v SSSR 2 no.5:24-25 My '57. (MLRA 10:7)  
(Patents)



GORODETSKIY, Yu.B.

KOROTKOV, B.L., inzhener; GORODETSKIY, Yu.B., inzhener.

Slabs used for paving highways. Izobr. v SSSR 2 no.6:11-12 Je '57.  
(Pavements) (MLRA 10:8)

6-18-1967, 10. 12

[illegible]

reinforced concrete tube lining used in mining, i.e., v

2 no. 10-17 Ag 1 57.

(1124 10:3)

(Mining engineering)

Gorodetskiy, Yu. B.  
GORODETSKIY, Yu.B., inzh.

New techniques used in connecting water races. Izobr.v SSSR 2  
no.12:6-7 D '57. (MIRA 10:12)

(Hydraulic engineering)

GORODETSKIY, YU.

Strict control is necessary on the quality of the expert's opinion in determining the usefulness of inventions. Tr. From the Russian. p.6 Nacionalizatsii Vol. 6, No. 3, Mar., 1958. Sofia, Bulgaria.

Monthly Index of East European Accessions (EEAI) LC, Vol. 7, No. 10, Oct. 58

GORODETSKIY, Yu.B., inzh.

New turning mechanisms used in heavy excavators. Izobr.1  
rats. no.7:34 J1 '58. (MIRA 11:9)  
(Excavating machinery)

G. GORODETSKIY, Yu. B.

New policy for inventions, discoveries, and efficiency promoting. Avt.dor. 22 no.8:27-28 Ag '59. (MIRA 12:11)  
(Efficiency, Industrial) (Inventions)

GORODETSKIY, Yu.B., inzh.; SITNIKOV, L.P., red.; SOSINA, A.L., tekhn.  
red.

[Collection of inventions; building materials industry] Sbornik izobretenii; promyshlennost' stroitel'nykh materialov. Moskva, TSentr. biuro tekhn. informatsii, 1961. 264 p. (MIRA 14:10)

1. Russia (1923- U.S.S.R.) Komitet po delam izobreteniy i otkrytiy.  
(Building materials industry—Technological innovations)

GOMODETSKIY, Yu.B., inzh.; SUKHAREVA, R.A., red.; KAMYSHNIKOVA, A.A.,  
tekhn. red.

[Collection of inventions: construction and building materials  
in agriculture] Sbornik izobretenii; stroitel'stvo i stroitel'-  
nye materialy v sel'skom khoziaistve. Moskva, TSentr. Buro  
tekhn. informatsii, 1962. 47 p. (MIRA 16:3)

1. Russia (1923- U.S.S.R.) Komitet po delam izobreteniy i ot-  
krytiy.

(Building--Technological innovations)

(Building materials industry--Equipment and supplies)

(Agricultural engineering--Equipment and supplies)



PA 30/49775

GORODETSKY, YU. G.

USSR/Engineering  
Gauges  
Mensuration

Oct 48

"Automatic Control of Dimensions," Prof I. Ye. Gorodetskiy, Dr Tech Sci, Yu. G. Gorodetskiy, Engr, Sci Res Bu of Interchangeability, V. S. Vikhman, Cand Tech Sci, Sci Res Elektroautomatic Lab, B. S. Bayburov, Engr, Cen Inst of Labor and Mech, Ye. M. Levenson, Engr, Auto Works imeni Stalin, 6 $\frac{1}{2}$  pp

"Vest Mashinostroy" No 10

Describes various models of automatic gauges, with 12 illustrations.

30/49775

GORODETSKIY, YU. G. and P. M. POLIANSKII

Primenenie pnevmaticheskikh metodov kontrolya v mashinostroenii. Moskva, Mashgiz, 1949. 126 p. illus.

Bibliography: p. 126-127.

Using pneumatic methods of control in mechanical engineering.

DLC: TJ1005.G67

SO: Manufacturing and Mechanical Engineering in the Soviet Union, Library of Congress, 1953.

GORODETSKIĭ, Yu. G.

Konstruktsiia i ekspluatatsiia sredstv izmereniia razmerov v mashinostroenii. Rekomendovano v kachestve uchebn. posobiia dlia tekhnikumov. Moskva, Mashgiz, 1951. 370 p. illus.

Bibliography: p. (365)-366.

Design and operation of dimension-measuring instruments in machine building.

DLC: TJ1313.G68

SO: Manufacturing and Mechanical Engineering in the Soviet Union, Library of Congress, 1953.

<sup>1</sup>  
CORODETSKY, Yu. G.

According to Izvestiya, Acad. Nauk SSSR (OTK 12, (1888-91) 1953, the following was read at the seminar of the Laboratory of Machine and Instrument Precision, Institute of Machine Science, Academy of Sciences, USSR in 1952 and the first half of 1953:

Yu. G. Gorodetsky read two papers "Methods of determining errors in pneumatic measuring systems" and "Methods of layout of automatic control devices for ball and roller bearing (production) lines". In the first paper Yu. G. Gorodetsky set out a method for determining systematic and chance errors in pneumatic systems working under steady conditions, by means of a group of standards. The second paper dealt with experience in the layout ("provision") of pneumatic checking automatic devices for automatic (production) lines.

S0: Gt Brit, Min of Defence, DSI Trans #38. May 54, Unclas.

GORODETSKIY, Yu. G.

USSR/Engineering - Pneumatics

Card : 1/1

Authors : Gorodetskiy, Yu. G.

Title : Fallibility of a pneumatic measurement method.

Periodical : Stan. 1 Instr., Ed. 6, 25 - 27, June 1954

Abstract : A graphic calculation method, used for designing and adjusting pneumatic control equipment and instruments, was devised. The calculations are based on the characteristics of intake and exhaust nozzles of the instrument, which permit the magnitude of error to be determined. Graphs; diagrams.

Institution : ...

Submitted : ...

8 (2)

SOV/112-57-5-10715

Translation from: Referativnyy zhurnal. Elektrotehnika, 1957, Nr 5,  
pp 161-162 (USSR)

AUTHOR: Gorodetskiy, Yu. G.

TITLE: Checking Pneumatic Primary Elements and Automatic Control Devices  
That Are Used in Multirange Sorting (Proverka pnevmaticheskikh datchikov i  
kontrol'nykh avtomatov dlya mnogodiapazonnoy rassortirovki)

PERIODICAL: V sb.: Tochnost' izgotovleniya sharikovykh i rolikovykh  
podshipnikov na avtomatich. liniyakh. M., AS USSR, 1955, pp 206-221

ABSTRACT: Diaphragm-type mercury and sylphon differential pneumatic pickups  
are described. It is pointed out that error evaluation of pneumatic pickups in  
terms of distance is wrong in principle. The pickup error should be expressed  
in terms of pressure, as this characteristic is independent of measuring  
conditions. A pickup connection diagram for checking chance errors is  
presented, and instructions for such checking are given. Accuracy of multi-

Card 1/2

SOV/112-57-5-10715

Checking Pneumatic Primary Elements and Automatic Control Devices That . . . .  
range automatic sorting is analyzed, and methods for determining the quantity  
of incorrectly sorted parts are indicated.

V.F.R.

Card 2/2

GORODETSKIY, Yuriy Georgiyevich; KOLLI, A.Ya. inzhener, redaktor [deceased]  
GRIGOR'YEV, I.A., kandidat tekhnicheskikh nauk, retsenzent; POPOVA,  
S.M., tekhnicheskiy redaktor; SOKOLOVA, T.F., tekhnicheskiy redaktor

[Automation of pneumatic measurement of dimensions] Avtomatizatsiya  
pnevmaticheskikh izmerenii razmerov. Moskva, Gos.nauchno-tekhn. izd-  
vo mashinostroit. lit-ry, 1956. 167 p. (MIRA 9:3)  
(Automation) (Measuring instruments)



GORODETSKIY, Yu.G.

Designs and the range of application of pneumatic instruments used  
for checking gauges. Stan.i instr. 28 no.4:16-18 Ap '57.

(MLRA 10:5)

(Pneumatic control) (Measuring instruments)

DOBRYNIN, Yevgeniy Mikhaylovich; TAYTS, B.A., prof., doktor tekhn.nauk, retsenzent; GORODETSKIY, Yu.G., kand.tekhn.nauk, retsenzent; VALUDINSKIY, A.S., kand.tekhn.nauk, red.; YELISEYEV, M.S., red.izd-va; TIKHANOV, A.Ya., tekhn.red.

[Instruments for automatic control of dimensions in the manufacture of machinery] Pribory avtomaticheskogo kontrolia razmerov v mashinostroenii. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1960. 302 p. (MIRA 13:7)  
(Machinery industry) (Automatic control)

DEANOVSKY, M.G.; GORODETSKIY, Yu.G.; VOLCHANINOV, V.S.

The PP-3 pneumatic profilograph. Biul.tekh.-ekon.inform. no.11:31-  
33 '60. (MIRA 13:11)

(Pneumatic gauges)

DRANOVSKIY, M.G., kand.tekhn.nauk; GORODETSKIY, Yu.G., kand.tekhn.nauk;  
SMIRNOV, B.M., inzh.

Mechanized TS-1 model trimmer. Der.prom. 10 no.5:16-17 My '61.  
(MIRA 14'5)

1. Nauchno-issledovatel'skiy institut derevoobrabatyvayushchego  
mashinostroyeniya.

(Woodworking machinery)

BRUKVSKIY, M.G.; GOLODETSKIY, Yu.G.; VOSKRESEN, V.S.

The RD-1 pneumatic pressure regulator. Biul. tekhn.-ekon. inform.  
no. 2:25-36 '61. (NTR. 14:1)

(Pressure regulators)

DRANOVSKIY, M.G., kand.tekhn.nauk; GORODETSKIY, Yu.G., kand.tekhn.nauk;  
BOTNER, R.Kh., inzh.

Systems for the automatization of lumber cutoff sawing. Der.  
prom. 10 no.8:12-14 Ag '61. (MIRA 14:8)  
(Woodworking machinery) (Automatic control)

DRANOVSKIY, M.G., kand.tekhn.nauk; GORODETSKIY, Yu.G., kand.tekhn.nauk

RD-1 pneumatic pressure regulator. Der.prom. 10 no.12:17 D  
'61. (MIRA 14:12)

1. Nauchno-issledovatel'skiy institut derevoobrabatyvayushchego  
mashinostroyeniya.  
(Pressure regulators)

DRANOVSKIY, M.G.; GORODETSKIY, Yu.G.; PIVOVAROV, A.Ya.

Automatic durable feeder for pile sorting. Der.prom. 11 no.2:10-11  
F '62. (MIRA 15:1)

(Lumber--Drying) (Woodworking machinery)



AUTHOR: Gorodetskiy, Yu.I.

S/141/59/002/05/015/026

EO41/E321

TITLE: The Theory of the Excitation of Vibrations When Drilling

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika,  
1959, Vol 2, Nr 5, pp 776 - 786 (USSR)

ABSTRACT: By using locus diagrams to describe the separate effects of forces acting on a complex structure, a classification is made of papers devoted to lathe cutting-tool vibration and the basic mechanisms in drill-chatter are distinguished. Drill stability is investigated for both discrete and distributed idealizations. With the aid of D-analysis in the parameter plane regions of vibration-free operation are mapped out. The diagram which constitutes the critical apparatus was first used by Neymark (Ref 26). In Figure 1, for example, a lathe tool is reducing the diameter of a plain shaft with a fixed depth of cut and feed rate. The partial oscillators are represented by points  $(x, y, z, \varphi, s)$ , the directed forces (or couplings) by directed segments, the reciprocal forces (elasticity, inertia, gyroscopic force) by undirected segments. A closed contour which

Card1/5

S/141/59/002/05/015/026

E041/E321

The Theory of the Excitation of Vibrations when Drilling

does not cross itself, made up of undirected and, at least one directed, segments is called a cycle. If a system is statically stable then, for a linear mechanism of exciting oscillations, it is necessary to have a negative friction or cycle. For example, in Figure 1 the tool chatter may be due to negative friction along  $\varphi$  and  $y$  and cycles 1, 2 and 3. The effects along  $\varphi$  and  $y$  have been studied in Refs 1-5 and cycles 1 and 2 in Refs 6 and 7. Cycle 3 has not so far been examined. In the paper vibration of the workpiece is not taken into account. The main features, as far as analysis is concerned, of a pillar drilling machine are shown in Figure 2. There are two basic oscillatory systems: the spindle and the drive motor  $\varphi$ ; the entire spindle assembly,  $s$ . The drill is supposed absolutely rigid. Changes in feed and rate of feed ( $s, \dot{s}$ ) lead to a change in the torque  $M_\varphi$ , while a change in drill speed  $\dot{\varphi}$  produces a change in the axial component,  $P_x$  of the cutting force. This means that  $s$  acts on  $\varphi$

Care 2/5 by means of directed coordinate and velocity while  $\varphi$  acts

S/141/59/002/05/015/026

# The Theory of the Excitation of Vibrations When Drilling

on  $s$  with a velocity vector only. This is represented in the diagram of Figure 3, whence it follows that vibrations arise because of negative friction along  $\varphi$ , and due to cycle 1 made up of the directed segments of coordinate and velocity and cycle 2 made up of velocities. Another reason for vibration may be the presence of forces delayed by  $1/m$  of the spindle rotation time and of  $m$  cutting edges on the tool. When drilling deep holes the drill may no longer be considered rigid and an important part is played by the delay encountered by an elastic wave running the length of the drill. In the rigid case, during vibration, the feed rate may increase independently of the cutting rate and feed and the force  $P_x$  and torque  $M_\varphi$  are denoted in Eq (1). Figure 4 shows how the swarf is formed. The separate  $s$  and  $\varphi$  oscillations are described by Eqs (4) and (5), respectively, with boundary conditions for  $x = 0$ ,  $x = l$  in Eqs (6) and (7), respectively. Differentiating Eqs (5), (6) and (7) with respect to  $t$  and

Card 3/5

S/141/59/002/05/015/026

E/041/E321

The Theory of the Excitation of Vibrations When Drilling

and substituting  $\dot{\phi} = v/r$ , the equation for  $v$  becomes Eq (8) which, after some transformation, becomes the characteristic Eq (12). The stability is now investigated for a number of particular cases. When the drill is quite rigid, the discussion also applies to the case of facing and plain turning and end-milling as in Figure 5. Two sub-cases are of interest:  $\lambda_1 = \infty$ ;  $\lambda_2 = \infty$ . The values of  $\lambda_1$  and  $\lambda_2$ , elasticity coefficients, are defined in Eqs (14) and (15). When  $\lambda_1 = \infty$  the mechanism is negative friction along  $\phi$  and the stability criterion is that  $\delta_2$  (foot of p 780) should be positive.

When  $\lambda_2 = \infty$ , the vibration arises from time lag. For representation in the parameter plane, Eq (12) is re-written as in Eq (20) and the parameters  $\alpha$  and  $\beta$  are introduced as in Eq (21). The D-analysis is shown in Figure 7 and the stable areas depend on  $k$ . A third sub-case arises when  $\tau$ , the time lag, is small. The

Card4/5

S/141/59/002/05/015/026

E041/E521

The Theory of the ~~Excitation~~ of Vibrations When Drilling

parameter plane of Figure 9 applies. When the drill cannot be considered perfectly rigid the construction in the parameter plane becomes more complex. Figure 11 shows a number of particular cases while Figure 12 is a Vyshnegradskiy diagram with the stable regions shaded. Figure 13 shows the relationship between vibration frequency and the length of the drill assembly. There are 13 figures and 27 references, 22 of which are Soviet, 4 English and 1 French.

ASSOCIATION: Nauchno-issledovatel'skiy fiziko-tekhnicheskii institut pri Gor'kovskom universitete (Physico-technical Scientific Research Institute of Gor'kiy University)

SUBMITTED: April 10, 1959

Card 5/5

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S/141/59/002/06/015/024

E192/E382

AUTHORS: Neymark, Yu.I., Gorodetskiy, Yu.I. and Leonov, N.N.

TITLE: Investigation of the Stability of Some Distributed Linear Systems

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, 1959, Vol 2, Nr 6, pp 967 - 988 (USSR)

ABSTRACT: The following dynamic system is considered. The output variable  $y(t)$  is uniquely determined by the input function  $x(\tau)$  for  $\tau \leq t$ . The set of operations necessary for the functions  $x(t)$ , in order to obtain  $y(t)$ , is the operator of the system. If the operator is linear the system is also linear. The dynamic system is said to be stable if small input perturbations result in small perturbations at the output. In order to make this definition clearer it is necessary to have quantitative characteristics of the input and output perturbations. If the characteristics of the input and output are denoted as  $r$  and  $\rho$ , the stability requirement states that for  $\varepsilon > 0$ ,  $\rho y$  should be smaller than  $\varepsilon$  if  $rx < \delta$ , where  $\delta > 0$  and is independent of  $\varepsilon$ . It is assumed that the input and output variables  $x(t)$

Card1/6

80133

S/141/59/002/06/015/024

E192/E382

Investigation of the Stability of Some Distributed Linear Systems

and  $y(t)$  can undergo Laplace transformations and that the relationship between them can be expressed by:

$$y(p) = K(p)x(p) \quad (1.1) .$$

It is known that from the condition expressed by Eq (1.2) it follows that the transformation  $F(p)$  of the function  $f(t)$  is an analytic function of  $p$  in the semi-plane  $\text{Re } p > \sigma$  and that for an arbitrary  $\sigma' > \sigma$ , it is possible to write:

$$r_f = \int_0^{\infty} |f|^2 e^{-2\gamma t} dt, \quad \rho_f = \int_0^{\infty} |f|^2 e^{-2\gamma' t} dt \quad (1.5) .$$

If  $r_f = \rho_f$ , the following theorem is true: "In order that a linear system be stable with respect to all the perturbations  $x(t)$ , for which  $\rho_x < +\infty$ , it is necessary that the function  $K(p)$  should be analytical for  $\text{Re } p > \gamma$ "

Card2/6

80133

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E192/E382

# Investigation of the Stability of Some Distributed Linear Systems

and it is sufficient for the function to be analytical in any semi-plane  $\text{Re } p > \gamma'$  where  $\gamma' < \gamma''$ . A further theorem states the following: "In order that the linear system be stable in the sense:

$$r_f = \sup_{t>0} e^{-\gamma t} |f(t)|, \quad \rho_f = \sup_{t>0} e^{-\Gamma t} |f(t)| \quad (1.7)$$

for  $\Gamma = \gamma$  it is necessary that the system should be stable in accordance with Eqs (1.5) at  $\Gamma = \gamma$  and it is sufficient that the function  $K(p)$  should be analytical in any semi-plane  $\text{Re } p > \gamma'$  for  $\gamma' < 0$  and that the integral:

$$\int_{-\infty}^{+\infty} |dK| dp \Big|_{p=i\omega}^2 \quad (1.8)$$

should be convergent. A system described by :

Card3/6



80133

S/141/59/002/06/015/024

E192/E382

Investigation of the Stability of Some Distributed Linear Systems

$$\frac{\partial^2 u}{\partial t^2} - a \frac{\partial^2 u}{\partial x^2} - b \frac{\partial u}{\partial x} - c_1 u = f_0(u) \quad (1.9)$$

$$\frac{d\xi_i}{dt} = \sum_{s=1}^n a_{is} \xi_s = f_i(\xi_1, \xi_2, \dots, \xi_n) \quad (1.10)$$

(i = 1, 2, ..., n - 2)

is considered as a general example. The system can be linearized and the equations are then written as Eqs (1.11) and (1.12). If it is assumed that the initial conditions are 0, Eqs (1.11) and (1.12) can be written as Eqs (1.13) and (1.14). The solution of this system can be written as:

Card4/6

$$\underline{B} = K(p)\underline{A}$$

(1.16)

80133

S/141/59/002/06/015/024

E192/E382

Investigation of the Stability of Some Distributed Linear Systems

where  $A$  and  $B$  are vectors and  $K(p)$  is expressed by the matrix given by Eq (1.17). It is shown that the solution of the stability problem is equivalent to the investigation of the roots of the so-called characteristic equation; this is expressed by  $\Delta(p) = 0$ . The above theoretical results are employed to investigate the stability of several systems. First, the so-called problem of I.N. Voznesenskiy is considered. The system is described by Eq (2.1). It is shown that its characteristic equation is in the form of Eq (2.7). Secondly, a feedback amplifier containing a lossy delay line in the feedback loop is investigated. The characteristic equation of the system is in the form of Eq (3.1), where  $J(p)$  is the transfer function of the feedback loop. The stability of an automatic compressor station operating between input and output mains of a gas supply system is investigated. The operation of this system is described by Eqs (4.1), (4.2) and (4.3). A temperature controller is also considered. The operation

Card5/6

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E192/E382

Investigation of the Stability of Some Distributed Linear Systems  
of the system is described by Eqs (5.1) and (5.5).  
There are 11 figures and 24 references, 1 of which is  
English and 23 are Soviet.

ASSOCIATION: Nauchno-issledovatel'skiy fiziko-tekhnicheskiy  
institut pri Gor'kovskom universitete (Scientific-  
research Physics-engineering Institute of Gor'kiy  
University)

SUBMITTED: July 2, 1959

Card 6/6

GORODETSKIY, Yu.I. (Gor'kiy)

Theory of the excitation of vibrations caused by machining metals  
on lathes. Izv. AN SSSR.Otd.tekh.nauk.Mekh.i mashinostr. no.6:  
74-83 N-D '61. (MIRA 14:11)

(Turning--Vibration)

GORODETSKIY, Yu.S., inzh.

Using the method of oscillographic polarography in controlling  
galvanic baths. Mashinostroenie no.5:74-75 S-0 c4  
(MIRA 18:2)

AUTHORS:

Tur'yan, Ya. I., Gorodetskiy, Yu. S.

20-4-31/52

TITLE:

The Oscillographic Investigation of Oxides Which are Formed on a Nickel Anode With the Electrochemical Separation of Oxygen (Ostsillograficheskoye issledovaniye okislov, obrazuyushikhya na nikelvovom anode pri elektrokhimicheskoy vydelenii kisloroda).

PERIODICAL:

Doklady AN SSSR, 1957, Vol. 117, Nr 4, pp. 655-657 (USSR)

ABSTRACT:

In order to discover the mechanism of an overvoltage caused by oxygen, both the nature and concentration of those oxides which are formed on a smooth nickel anode in a basic solution, must be known. First, several previous works dealing with this subject are mentioned. The authors developed methods for the oscillographic investigation of a smooth nickel anode. This made the determination of the quantity of stable oxide and also of the quantity of unstable oxide, possible. The essential feature of this methodics is explained here by means of a graph. The elaborate investigation was carried out here with an oscillograph of the type MTO-2 with 8 loops and photographic recording. A spectroscopically pure nickel anode was investigated. The approximate course of the "complete" curves of discharge (of the first one and of the one following up

Card 1/3

The Oscillographic Investigation of Oxides Which are Formed 2-4-31/52  
on a Nickel Anode With the Electrochemical Separation of Oxygen.

to the complete reduction of the oxides) is shown in a diagram. The upper horizontal part section on the first curve corresponds to the polarizing current still switched on. The point of current-decrease is obtained at the moment of switching off the polarizing current, then the middle horizontal section follows and subsequently the current intensity decreases down to the lower horizontal sectional part. The lower part-section corresponds to the presence of NiO on the surface. The middle horizontal part-section part corresponds to the reduction of  $\text{NiO}_2$  and  $\text{Ni}_2\text{O}_3$ . The decrease of the amperage from the middle to the lower horizontal part-section part takes place comparatively slowly. The quantity of electricity corresponding to the "complete" curve of discharge depended only very little on the intensity of the polarization current, but increased with increasing duration of polarization. The "incomplete" curve of discharge reproduced in a further diagram, had no upper horizontal part-section, because the polarizing current was switched out prior to the switching on of the vibrator. The surface of the "incomplete" curve of discharge was smaller than the surface of the "complete" curve of discharge. After a very brief period of "recovery" (some

Card 2/3

The Oscillographic Investigation of Oxides Which are Formed on a Nickel Anode With the Electrochemical Separation of Oxygen. 20-4-31/52

seconds) this reduction of the surface increased with decreasing duration of the "recovery". A quantity of  $\sim 3\text{NiO}_2$ -layers resulted from this reduction of surface. This confirms the complete covering of the surface of the nickel anode by the highest oxide within the range of great current densities. After a polarization lasting 5 minutes, there exist already  $\sim 17$  layers of  $\text{Ni}_2\text{O}_3$  and after a hour polarization of one hour there are already  $\sim 30$  layers. There are 3 figures and 11 references, 5 of which are Slavic.

ASSOCIATION: Kishinev State University (Kishinevskiy gosudarstvennyy universitet).

PRESENTED: May 21, 1957, by A. N. Frumkin, Academician.

SUBMITTED: April 20, 1957

AVAILABLE: Library of Congress

Card 3/3



S/123/61/000/013/015/025  
A052/A101

11860

AUTHORS: Kulikov, N. N.; Gorodetskiy, Yu. S.; Danku, Ye. P.

TITLE: Anticorrosion coating on aluminum

PERIODICAL: Referativnyy zhurnal, Mashinostroyeniye, no. 13, 1961, 102, abstract 13B726 ("Uch.zap. Kishinevsk. un-t", 1960, no. 56, 245-248)

TEXT: The results of an investigation of the oxidation of aluminum are reported. The oxidation has been performed in electrolyte being a mixture of sulfuric and zirconyl sulfuric acids. As a sample AM aluminum wire of 2mm diameter has been taken. Oxidation has been performed after a careful preliminary preparation and electropolishing. The electrolyte for anodizing consists of (in g/l): zirconylic acid (240), sulfuric acid (185), water (375). The treatment is done at the anode density of 10-13 a/dm<sup>2</sup>, voltage of 18-20 v, temperature of 35-38°C, duration of 30 min. /B

N. Savina

[Abstracter's note: Complete translation]

Card 1/1

GORODETSKIY, Ya.S.

Oscillographic study of the surface of the platinum anode in the  
electrochemical evolution of oxygen. Zhar.fiz.khim. 38 no.11:  
2717-2719 N '64. (MIRA 18:2)

1. Kishinevskiy gosudarstvennyy universitet.

GORODETSKIY, Yu.S.

Double-beam cathodic polarograph. Uch.zap.Kish.un. 68:87-90  
'63 [cover '64]. (MIRA 18:12)

GORODETSKIY, Yu.S.; TUPIKINA, N.A.

Control of electroplating baths by the use of oscillographic  
polarography. Uch.zap.Kish.un. 68:100-101 '63 [cover '64].  
(MIRA 18:12)

PATON, B.Ye.; GAVRISH, V.S.; <sup>G</sup>GRODETSKIY, Yu.S.

Universal programming system. Avtom.svar. 14 no.7:15-20 J1 '61.  
(MIRA 14:7)

1. Ordena Trudovogo Krasnogo Znameni Institut elektrosvarki im.  
Ye.O.Patona AN USSR.  
(Electric welding) (Automatic control)

PATON, B.Ye.; GAVRISH, V.S.; GORODETSKIY, Yu.S.

Programming device with dekatrons. Avtom.svar. 15 no.5:1-4 My  
'62. (MIRA 15:4)

1. Ordena Trudovogo Krasnogo Znameni Institut elektrosvarki  
imeni Ye.O.Patona AN USSR.  
(Programming (Electronic computers))

GORODETSKIY, Yu.S.

NO NAME FOR NEW OR OLD PAGES OF THE BIBLIOGRAPHIC LIST

Control of electrolytic baths with the use of oscillographic  
polarography methods. Zashch. met. 1 no.5:573-577 S.O '65.  
(MIRA 18:9)

1. Kishinevskiy gosudarstvennyy universitet.

EC-17-44 ENG(S)/ENT(T)/ESP(C)/EPB/ESP(T)/ESP(L) 1-17-65 17  
 ACCESSION NR: AP5016825 UR/0354/65/001/006/0681/0685  
 541.13

AUTHOR: Gorodetskiy, Yu. S.

TITLE: Oscillographic investigation of a silver anode during electrochemical liberation of oxygen

SOURCE: Elektrokhimiya, v. 1, no. 6, 1965, 681-685

TOPIC TAGS: oscillograph, silver anode, electrochemical oxygen liberation

ABSTRACT: The effect which electrochemical liberation of oxygen on a silver anode has on the state of this silver anode was studied. It was found that the area of a silver anode with an apparent surface area of 1 cm<sup>2</sup> increases by 1.5-2.0 times during the electrochemical liberation of oxygen. The area of a silver anode with an apparent surface area of 1 cm<sup>2</sup> increases by 1.5-2.0 times during the electrochemical liberation of oxygen. The area of a silver anode with an apparent surface area of 1 cm<sup>2</sup> increases by 1.5-2.0 times during the electrochemical liberation of oxygen. The area of a silver anode with an apparent surface area of 1 cm<sup>2</sup> increases by 1.5-2.0 times during the electrochemical liberation of oxygen.

Card 1/2



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ACCESSION NR: AP5015825

taken within 15 seconds after incomplete anode polarization: the section corresponding to  $\text{Ag}_2\text{O}$  is absent. After total anodization, the section of  $\text{Ag}_2\text{O}$  corresponding to the silver anode corresponds to the section of  $\text{Ag}_2\text{O}$  corresponding to the silver anode. The sections of the anode surface corresponding to the silver anode depend upon the anodization potential and the time of anodization. The mechanism of oxygen evolution in a silver anode is discussed in terms of the formation and decomposition of silver oxide.

ASSOCIATION: Kishinevskiy gosudarstvennyy universitet (Kishinev State University)

SUBMITTED: 03Mar64

EXCL: 00

SUB CODE: GC

NO REF SDV: 009

OTHER: 0

Card 2/2

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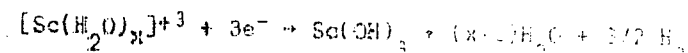
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were photographed. It was shown that in the presence of scandium ions a characteristic peak occurs on the polarogram. In the case of Sc (III) depolarizer the

Card 1/3

Scandium current, in contrast to other depolarizers, is not directly proportional to the square root of the rate of voltage scan. On the contrary it decreases linearly with the square root of the voltage scan. This anomaly is explained by the specific mechanism of the discharge of scandium ions from the complex.



The absence of direct proportionality of the current to the square root of the rate of voltage scan is explained by the fact that the complex as well as free scandium ions participate in the reduction process. The results of the above experiments show that the current is proportional to the concentration of the complex, which was successfully utilized for the determination of Sc(III) ions in the presence of a depolarizer, namely, 1,10-phenanthroline. The results are given in Figure 1.

Card 1/3

1-1795-45  
ADDITIONAL: AP501845

ADDITIONAL: Kishinevskiy gosudarstvennyy universitet

SUBMITTED: 28 Nov 64

ENCLOSURE

NO. 111-111

OTHER

Card

ОБЩЕСТВЕННЫЙ, МОСКВА, СССР.

Attachment for recording on magnetic tape, prepared on tracing  
cloth, Sov. Int. 31 no. 10:1915 165.

(1915 1911)

1. Kishinevskiy gosudarstvennyy universitet.

GORODETSKIY, Z.

A great topic; told by a wall newspaper editor. Prom.koop. 13  
no.3:34 Mr '59. (MIRA 12:4)

1. Redaktor stennoy gazety arteli "Tol'prom," Moskva.  
(Moscow--Socialist competition)

YESHCHIN, Semen Borisovich; GORODETSKOV, Aleksandr Petrovich, nauchnyy red.; ROGACHEV, P.V., red.; SAMUYLOVA, A.G., tekhn.-red.

[Work training for assistant engineers and electricians in the repair of electric locomotives and electric units; teaching aid for instructors at railroad and technical schools] Proizvodstvennoe obucheniye pomoshchnikov mashinistov i slesarei-elektrikov po remontu elektrovozov i elektrosektsii; v pomoshch' masteram zheleznodorozhnykh i tekhnicheskikh uchilishch. Moskva, Vses. uchebno-pedagog.izd-vo Trudrezervizdat, 1958. 125 p.  
(MIRA 12:9)

(Electric railroads--Maintenance and repair)

32(3)

SOV/112-59-5-9118

Translation from: Referativnyy zhurnal. Elektrotehnika, 1959, Nr 5, p 102 (USSR)

AUTHOR: Gorodetskoy, A. P.

TITLE: Should Types and Periodicity of Electric-Locomotive Repairs be Changed?

PERIODICAL: Elektr. i teplovozn. tyaga, 1958, Nr 2, pp 19-20

ABSTRACT: A substantiation of a new repair schedule for electric locomotives set forth in the table below is presented:

Place of Repair	Repair Type	Thousands km between repairs		Number of repairs between periods	
		Mountain	Plain	Mountain	Plain
Mfg plant	Overhauling	1,200	1,500	0	0
same	Medium repair	600	750	1	1
Depot	Lifting	200	250	2	2
same	Large periodic	50	125	3	1
same	Small periodic	17	21	2	5
same	Control technical	10-12	10-12	1	1

Card 1/1

V. A. I.



AVDEYEV, Mikhail Mikhaylovich; TSVETKOVICH, Sergey Aleksandrovich; GORO-  
DETSKOV, A.P., inzh., ratsenent; SIDOROV, N.I., inzh., red.;  
MEDVEDEVA, M.A., tekhn. red.

[Practices in the operation of a.c. electric locomotives] Opyt eks-  
luatatsii elektrovozov peremennogo toka. Moskva, Vses. izdatel'sko-  
poligr. ob"edinenie M-va putei soobshcheniia, 1961. 37 p.  
(Electric locomotives) (MIRA 14:11)

GORODETSKOV, A.P., inzh.

Regrettable omissions in a certain brochure. Elek. i tepl. tiaga  
5 no.6:46 Je '61. (MIRA 14:10)

(Electric railroads—Wires and wiring)  
(Lubrication and lubricants)

MAKAREVICH, Vitaliy Sergeyevich; VEPRIK, Gennadiy Nikolayevich;  
GERASIMOV, Vasilii Petrovich; SIMONOV, Veniamin Georgiyevich;  
GORODETSKOV, A.P., inzh., retsenzent; LYUTTSAU, A.G., inzh.,  
retsenzent; ZUBLEVSKIY, S.M., inzh., red.; USENKO, L.A., tekhn.  
red.

[Detection and elimination of faults in VL22<sup>22</sup> electric locomotives]  
Obnaruzhenie i ustranenie neispravnostei na elektrovozakh VL22<sup>M</sup>.  
Moskva, Transzheldorizdat, 1962. 127 p. (MIRA 15:11)  
(Electric locomotives--Maintenance and repair)

GLOTOV, V.L.; GORODETSKOV, A.P., inzh., retsenzent; KOSTYUKOVSKIY,  
E.A., inzh., red.; VOROB'YEVA, L.V., tekhn. red.

[Engineering inspection and equipment of a.c. locomotives]  
Opyt tekhnicheskogo osmotra i ekipirovki elektrovozov pe-  
remennogo toka. Moskva, Izd-vo "Transport," 1964. 37 p.  
(MIRA 17:3)

YERSHOV, Ye.F.; ZAYTSEV, M.V.; GORODETSKOV, A.P., inzh., retsenzent;  
KALININ, V.K., kand. tekhn. nauk, red.; VASIL'YEVA, N.N.,  
tekhn. red.

[Operation of VL60 electric locomotives; experience of the  
Gorkiy railroad] Ekspluatatsiia elektrovovozov VL60; opyt  
Gor'kovskoi dorogi. Moskva, "Transport," 1964. 62 p.  
(MIRA 17:2)

L 18883-66 EWT(1)/EWT(m)/ETC(f)/ENG(m)/I/EWP(t) IJP(c) RDW/GG/JD  
 ACK NR: AP6007803 SOURCE CODE: UR/0185/66/011/002/0221/0224  
 AUTHOR: Lashkar'ov, V. Ye.; Sheynkman, M. K.; Lyubchenko, O. V.; Gorodets'kyi, I. Ya.; Yermolovych, I. B.  
 ORG: Institute of Semiconductors AN UkrSSR, Kiev (Instytut naftyprovodnykh AN URSR) 77  
 TITLE: Determination of the parameters of "sensitizing" recombination centers in CdS and CdSe single crystals. 21.44.55 B  
 SOURCE: Ukrayins'kyi fizychnyy zhurnal, v. 11, no. 2, 1966, 221-224  
 TOPIC TAGS: color center, cadmium sulfide, cadmium selenide, single crystal, electron recombination, capture cross section, valence band, ir light  
 ABSTRACT: Continuing earlier investigations of the kinetics of relaxation of photocurrent in CdS and CdSe single crystals (FIT v. 7, 1717, 1965 and earlier papers), the authors consider in this paper new stationary and kinetic methods of determining hitherto undetermined parameters (the capture coefficient ( $C_r$ ) of holes by type II centers, and their energy levels ( $E_{vr}$ ) reckoned from the top of the valence band), as well as new methods of determining the cross section for the capture of a quenching infrared photon. The new methods are based on the use of stationary

Card 1/2

2

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ACC NR: AP6007803

exciting illumination in conjunction with pulses of exciting or quenching ir light. The theory underlying the methods is briefly described. The methods were tested on selected high-resistance undoped CdS and CdSe single crystals. The tests showed the presence in CdS of two types of recombination centers, with  $G_r \approx (3-5) \times 10^{-13} \text{ cm}^3/\text{sec}$  and  $E_{gr} = 1.0 \text{ ev}$  for the first, and  $G_r \approx (2-3) \times 10^{-12} \text{ cm}^3/\text{sec}$  and  $E_{gr} = 1.18 \text{ ev}$  for the second. Tests made by three different methods gave nearly identical results. Orig. art. has: 2 figures, 5 formulas, and 1 table. [02]

SUB CODE: 20/ SUBM DATE: 01Oct65/ ORIG REF: 005/ - CTH REF: 002  
ATD PRESS: 4217

Cord 2/2

1. GORODEYEV, V. A.
2. USSR (600)
3. Looms
4. Effect of setting size on the productivity of silver warping frames.  
Tekst. prom. No. 11 - 1952  
12

9. Monthly List of Russian Accessions, Library of Congress, February, 1953. Unclassified.



87b62

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B019/B056

24. 2/20

AUTHORS: Afrosimov, V. V., Gladkovskiy, I. P., Gordeyev, Yu. S.,  
Kalinkevich, I. F., and Fedorenko, N. V.

TITLE: Investigation of Atomic Flux Emitted by Plasma

PERIODICAL: Zhurnal tekhnicheskoy fiziki, 1960, Vol. 30, No. 12,  
pp. 1456 - 1468

TEXT: The authors developed a method of measuring the flux of uncharged atoms having an energy of 300 ev to some thousand kev. The method is based upon the recording of individual atoms after their ionization and acceleration to 10-20 kev. Fig.1 shows a scheme of this instrument, in which the ionized particles are directed onto an Al-Mg target, where they produced secondary ions which were measured by a scintillation counter. For the calibration of the installation, a special device for monochromatic ions and atoms was used. The calibration curves are shown and discussed in detail. Further, installations are described in detail, which permit the time dependence of the atom flux, the energy distribution, and the mass analysis of the atoms to be determined by an

Card 1/4

87462

Investigation of Atomic Flux Emitted by  
Plasma

S/057/60/030/012/009/011  
B019/B056

oscilloscope. The energy distribution of the atoms was studied with the relation  $dJ/dE = J_+(E)/\bar{\alpha}_0(E)\mu E$ , where  $J_+(E)$  is the current of secondary ions, and  $\bar{\alpha}_0(E)$  the mean recording efficiency. The density of the atomic flux was determined from the relation

$$dJ/d\Omega = (1/\bar{S}_{eff}) \int_{E_1}^{E_2} J_+(E) dE / \bar{\alpha}_0(E) \mu E, \text{ where } \Omega \text{ is the mean solid angle,}$$

and  $\bar{S}_{eff}$  the effective plasma surface. For calculating the concentration of atoms per unit volume the formula

$$n_0 = 2\sqrt{2M} \int_{E_1}^{E_2} (dJ/dE) dE / \sqrt{E} \text{ was used. By changing } \Omega, \text{ the light intensity } \mu,$$

and the thickness of the gas target, it is possible to improve the sensitivity considerably. The least measured density of the flux of hydrogen atoms having an energy of 300 ev in the case of an isotropic

Card 2/4

871.62

Investigation of Atomic Flux Emitted by  
Plasma

S/057/60/030/012/009/011  
B019/B056

velocity distribution was  $1 \cdot 10^{10}$  at/cm<sup>2</sup>.sec. There are 10 figures and  
5 references: 4 Soviet and 1 US.

ASSOCIATION: Fiziko-tekhnicheskii institut AN SSSR Leningrad  
(Institute of Physics and Technology AS USSR, Leningrad)

SUBMITTED: July 15, 1960

Card 3/4

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E019/B056

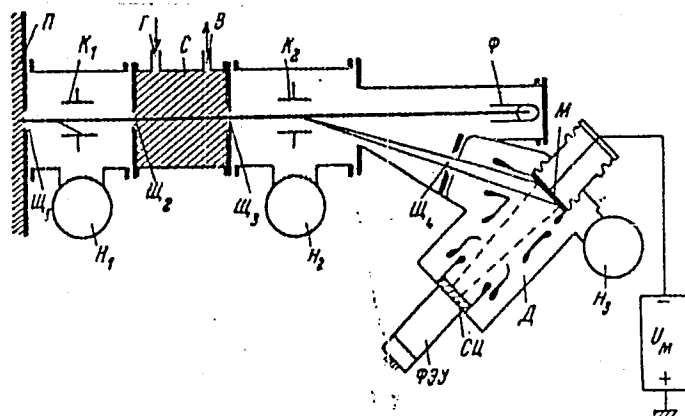


Fig.

Рис. 1. Схема прибора для исследования потока атомов.

M target.  $U_M$  source of acceleration voltage. CU scintillator.

ФДУ photomultiplier.  $H_1$ ,  $H_2$ , and  $H_3$  diffusion pumps. Ф Faraday auxiliary receiver.

Card 4/4

Legend to Fig.1:

П plasma space.  $Ш_1$  en-

trance slit of the in-

strument. C capacitor

for the deflection of

charged particles. C ioni-

zation chamber.  $Ш_2$  and  $Ш_3$

entrance and exit slits

of the ionization chamber.

Г and В tubes for the

lead-in of a gas and pres-

sure measurement.  $K_2$  ana-

lyzer.  $Ш_4$  detector-en-

trance slit. Д detector.

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B019/B056

26.2311

AUTHORS: Afrosimov, V. V., Gladkovskiy, I. P., Gordeyev, Yu. S.,  
Kalinkevich, I. F., Petrov, M. P., and Fedorenko, N. V.

TITLE: Investigation of a Flux of Neutral Atomic Particles  
Emitted by the Plasma of "Al'fa" Research Installation

PERIODICAL: Zhurnal tekhnicheskoy fiziki, 1960, Vol. 30, No. 12,  
pp. 1469 - 1484

TEXT: The authors used the device described in the present issue on  
p. 1456 ff. to investigate the atomic flux with energies of 300 ev to  
10 kev, emitted by the plasma of "Al'fa". The measurements showed that  
practically all atoms recorded are hydrogen atoms. The quantity of the  
fast atoms grows with an increase of the capacitor voltage, with a de-  
crease of the external magnetic field  $H_z$ , or with a decrease of the  
hydrogen pressure in the chamber. In the course of discharge, the quan-  
tity of fast atoms reaches a maximum, while the discharge current in-  
creases to its first maximum. However, there is no considerable

Card 1/4

87463

Investigation of a Flux of Neutral Atomic Particles S/057/60/030/012/010/011  
Emitted by the Plasma of "Al'fa" Research B019/B056  
Installation

difference in the energy distribution of atoms during discharge. A table gives data on the atomic flux. Analysis of the data showed that the fraction of atoms in the atomic flux generated by reflection of ions from the wall, is small compared to the fraction coming direct from the plasma. It was further shown that the energy distribution of atoms and ions in the plasma space are very similar, and that the energy distribution cannot be approximated by Maxwell distribution. The mean energy of hydrogen atoms reflected from a metal surface is estimated in an appendix. The authors thank B. P. Konstantinov for his valuable advice and discussion, D. M. Kaminker for his interest, O. V. Konstantinov and V. I. Perel' for taking part in discussions, as well as Ye. G. Komar, A. M. Stolov, and V. A. Glukhikh for their assistance in measurements. There are 11 figures, 1 table, and 8 references: 6 Soviet and 2 US.

Card 2/4

87463

Investigation of a Flux of Neutral Atomic S/057/60/030/C12/010/011  
Particles Emitted by the Plasma of "Al'fa" B019/B056  
Research Installation

ASSOCIATION: Fiziko-tekhnicheskiy institut AN SSSR (Institute of  
Physics and Technology of the AS USSR). Nauchno-  
issledovatel'skiy institut elektrofizicheskoy apparatury  
(Scientific Research Institute of Electrophysical  
Apparatus)

SUBMITTED: July 15, 1960

Card 3/4

87403

S/057/60/030/012/010/011  
B019/B056

1 Режим	Плотность потока			3 Еср. ев	4 ε, кДж/разр.
	а атомов на един. угла $\frac{dN}{d\Omega}$ см <sup>2</sup> · стрд. · разр.	б при изотропном распределении скоростей атомов $f_v$ см <sup>2</sup> · разр.	в в среднем, ускорен. мощ. атомов, $\frac{1}{2}mv^2$ кДж/см <sup>2</sup> · разр.		
5 кВ, 360 эрст.	$1.9 \cdot 10^{-13}$	$1.2 \cdot 10^{14}$	$1.0 \cdot 10^{-2}$	480	3.0
10 кВ, 360 эрст.	$8.6 \cdot 10^{-13}$	$5.4 \cdot 10^{14}$	$4.5 \cdot 10^{-2}$	530	13.5
10 кВ, 720 эрст.	$5.3 \cdot 10^{-13}$	$3.3 \cdot 10^{14}$	$2.5 \cdot 10^{-2}$	480	7.5
15 кВ, 180 эрст.	$5.0 \cdot 10^{-13}$	$3.1 \cdot 10^{14}$	$3.1 \cdot 10^{-2}$	670	9.4
15 кВ, 360 эрст.	$3.5 \cdot 10^{-13}$	$2.2 \cdot 10^{14}$	$2.3 \cdot 10^{-2}$	630	7.0
15 кВ, 720 эрст.	$4.4 \cdot 10^{-13}$	$2.8 \cdot 10^{14}$	$2.4 \cdot 10^{-2}$	530	7.2

Legend to Table 1: 1) Experimental conditions, voltage at the discharge capacitors in kv, magnetic field in oe. 2a) Atoms per unit of solid angle. 2b) Density of atomic flux in isotropic velocity distribution. 2c) Energy of atoms in joules/cm<sup>2</sup>.

Card 4/4



POLEVOLOV, I. I.; KIRIA, I. Ia.; K. M. K. H., V. I.; K. M. K. H., I. I.

Possible oil and gas occurrences in the Bitkov region based  
on new concepts of the geological structure of the Gishirnyy  
fold. Izudy UkrNIIGI no. 7149-53 '61.

(MIRA 1961)

AUTHOR: Gorodilov, A.N.

SOV/68-58-10-24/25

TITLE: ~~The Coking Industry~~ of the Chinese People's Republic  
(Koksokhimicheskaya promyshlennost' Kitayskoy narodnoy  
respubliki)

PERIODICAL: Koks i Khimiya, 1958, Nr 10, pp 60 - 63 (USSR)

ABSTRACT: The development of the Chinese coking industry from 1943 is outlined. The output of coke from 1950 to 1957 increased from 1,200 to 5,040 thousand tons. The number (31 batteries) and types of coke-oven batteries is given in the table. It is expected that the output for 1962 will increase three times in comparison with that of 1957. Coal output in 1957 - 130 million tons.. It is expected that 8 new batteries per year and a number of small works will be built. Design and research institutes are well staffed with qualified personnel. There is 1 table.

Card 1/1

L 44679-66 EWT(m)

ACC NR: AP6005361

SOURCE CODE: UR/0413/66/000/001/0106/0106

AUTHORS: Belov, Ye. M.; Gorodilov, V. M.; Minayev, I. G.; Titov, V. N.

ORG: none

TITLE: Ionization pulse gas analyzer detector. Class 42, No. 177681 [announced by Tomsk Polytechnic Institute of the Order of the Workers' Red Banner (Tomskiy ordena trudovogo krasnogo znameni politekhnicheskoy institut)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 1, 1966, 106

TOPIC TAGS: gas analyzer, gas composition analyzer, gas ionization

ABSTRACT: This Author Certificate presents an ionization pulse gas analyzer detector containing a chamber with two coaxial electrodes. An ionization source, e.g., an ~~α-emitter~~, is located inside the chamber. To increase the sensitivity of the detector to electronegative gases (e.g., oxygen in argon), the ionization source is located at the bottom of an annular slot in the insulating end cover of the chamber (see Fig. 1).

Card 1/2

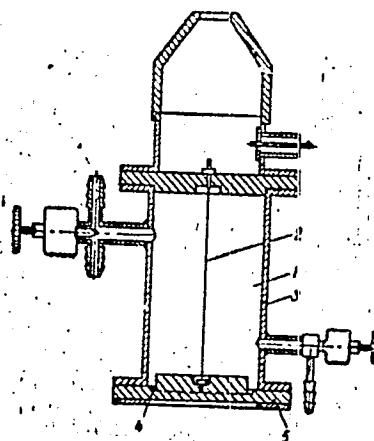
UDC: 543.51.08

L 44679-66

ACC NR:

AP6005361

Fig. 1. 1 - chamber; 2 and 3 - coaxial  
electrodes; 4 - ionization source;  
5 - end cover



Orig. art. has: 1 diagram.

SUB CODE: <sup>07/</sup>~~20/~~ SUBM DATE: 22Dec64

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Card 2/2